Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) An adjuvant, comprising:

a) a block copolymer of the general formula:

$HO(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_aH[[;]]$,

wherein (b) represents a number such that the molecular weight of the hydrophobic POP portion (C_3H_6O) is up to approximately 20,000 daltons and wherein (a) represents a number such that the percentage of hydrophilic POE portion (C_2H_4O) is between approximately 1% and 40% by weight; and,

b) a cationic surfactant.

2. (original) The adjuvant of claim 1 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is between approximately 9000 Daltons and 15,000 Daltons and subscript (a) of the general formula represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 35%, preferably at or below 10%.

3. (currently amended) The adjuvant of claim 1 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 9000 Daltons and subscript (a) of the general formula represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 5%.

4. (currently amended) The adjuvant of claim 1 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 12000 Daltons and subscript (a) of the general formula represents a number such that the percentage of hydrophile (C_2H_4O) is approximately 5%.

5. (original) The adjuvant of claim 1 wherein the block copolymer is CRL-1005.

6. (currently amended) The adjuvant of claims 1, 2, 3, 4 or 5 wherein the cationic surfactant is selected from the group consisting of benzalkonium chloride (BAK), benzethonium chloride, cetramide, cetylpyridinium chloride and cetyl trimethylammonium chloride.

7. (original) A polynucleotide vaccine formulation, comprising:

a) a population of polynucleotide molecules; and,

b) an adjuvant, the adjuvant consisting of a block copolymer of the general formula: $HO(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_aH$,

wherein (b) represents a number such that the molecular weight of the hydrophobic POP portion (C_3H_6O) is up to approximately 20,000 daltons and wherein (a) represents a number such that the percentage of hydrophilic POE portion (C_2H_4O) is between approximately 1% and 40% by weight; and,

c) a cationic surfactant,

wherein a portion of the polynucleotide vaccine molecule population are associated with the adjuvant and the remaining portion of the polynucleotide vaccine molecule population are free within a pharmaceutically acceptable buffer.

8. (original) The polynucleotide vaccine formulation of claim 7 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is between approximately 9000 Daltons and 15,000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 35%, preferably at or below 10%.

9. (currently amended) The polynucleotide vaccine formulation of claim 7 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 9000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 5%.

10. (currently amended) The polynucleotide vaccine formulation of claim 7 wherein subscript (b) of the general formula of the block copolymer represents a number such that the

molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 12000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is approximately 5%.

11. (original) The polynucleotide vaccine formulation of claim 7 wherein the block copolymer is CRL-1005.

12. (original) The polynucleotide vaccine formulations of claims 7, 8, 9, 10 or 11 wherein the cationic surfactant is selected from the group consisting of benzalkonium chloride, benzethonium chloride, cetramide, cetylpyridinium chloride and cetyl trimethylammonium chloride.

13. (currently amended) The polynucleotide vaccine formulation of claim 11 which is selected from the group consisting of ~~D118, D118a, and D121~~ 5 mg/mL DNA, 7.5 mg/mL CRL-1005, 0.45 mM BAK in PBS; 5 mg/mL DNA, 7.5 mg/mL CRL-1005, 0.60 mM BAK in PBS; and 5 mg/mL DNA, 7.5 mg/mL CRL-1005, 0.75 mM BAK in PBS.

14. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 7 into said mammalian host.

15. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 8 into said mammalian host.

16. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 9 into said mammalian host.

17. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 10 into said mammalian host.

18. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 11 into said mammalian host.

19. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 12 into said mammalian host.

20. (withdrawn) A method of inducing an immune response in an mammalian host which comprises introducing the polynucleotide vaccine formulation of claim 13 into said mammalian host.

21. (original) A polynucleotide vaccine formulation, comprising:

a) a population of polynucleotide molecules; and,

b) an adjuvant, the adjuvant consisting of a block copolymer of the general formula: $HO(C_2H_4O)_a(C_3H_6O)_b(C_2H_4O)_aH$,

wherein (b) represents a number such that the molecular weight of the hydrophobic POP portion (C_3H_6O) is up to approximately 20,000 daltons and wherein (a) represents a number such that the percentage of hydrophilic POE portion (C_2H_4O) is between approximately 1% and 40% by weight;

c) a cationic surfactant; and,

d) a non-ionic surfactant

wherein a portion of the polynucleotide vaccine molecule population are associated with the adjuvant and the remaining portion of the polynucleotide vaccine molecule population are free within a pharmaceutically acceptable buffer.

22. (original) The polynucleotide vaccine formulation of claim 21 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is between approximately 9000 Daltons and 15,000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 35%, preferably at or below 10%.

23. (currently amended) The polynucleotide vaccine formulation of claim 21 wherein subscript (b) of the general formula of the block copolymer represents a number such that the

molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 9000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is between approximately 3% and 5%.

24. (currently amended) The polynucleotide vaccine formulation of claim 21 wherein subscript (b) of the general formula of the block copolymer represents a number such that the molecular weight of the hydrophobe (C_3H_6O) is ~~between~~ approximately 12000 Daltons and subscript (a) of the general formula of the block copolymer represents a number such that the percentage of hydrophile (C_2H_4O) is approximately 5%.

25. (original) The polynucleotide vaccine formulation of claim 21 wherein the block copolymer is CRL-1005.

26. (original) The polynucleotide vaccine formulations of claims 21, 22, 23, 24 or 25 wherein the cationic surfactant is selected from the group consisting of benzalkonium chloride, benzethonium chloride, cetramide, cetylpyridinium chloride and cetyl trimethylammonium chloride.